NORTHEAST ELECTRONICS

A DIVISION OF NORTHERN TELECOM, INC.

INSTRUCTION MANUAL

MODEL 58A-CN

NOTCH FILTER MODIFICATION INSTRUCTIONS

No. A0058-10-601 ISSUE 2 DATE JAN 1977

PRINTED IN U.S.A.

Airport Rd., Concord, N.H. 03301 • (603) 224-6511 • TELEX 94-3453

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TTS 58A-CN NOTCH FILTER

MODIFICATION PROCEDURE

1. On TTS 58A front panel, loosen four captive screws marked with white arrow and remove chassis from cover.

2. Disconnect wires between cover battery pack and the chassis.

3. Remove notch filter modification components from packaging material and check against Figure 1 to ensure that all components have been received and are in undamaged condition.

4. See Figure 2 and locate center of hole to be drilled in front panel.

5. Use a punch to form a deep mark at the hole center. This will help keep the drill from wandering when drilling is started.

6. Drill a 15/32-inch hole at the center located in step 4.

7. See Figure 3 and locate coaxial cable and black shield wire attached to pins E and G on inside of PC1 (E-95048). Unsolder the two wires.

8. Clip off black shield wire from coaxial cable unsoldered in step 7 and wrap insulating tape around clipped end of wires.

9. Reroute loose end of cable unsoldered in step 7 under PC1, up the front panel, and near the hole in front panel.

10. Locate S10 in modification components, orient switch so that white wire is at top, (keyway up) and solder coaxial cable removed from PC1 in step 7 to pin 2 on switch. See Figure 6 for S10 pin identification.

11. Remove front panel retaining nut from HOLD switch S3.

12. Insert NOTCH FILTER switch S10 through front panel hole. Ensure that switch is oriented so that white wire is located at top and the keyway is up.

13. Select either light or dark gray cover plate, as appropriate, place over S3 and S10, and secure switches with retaining nuts. See Figure 4 for view of finished cover plate installation.

14. On PC5 (Figure 6), remove the two top screws that secure board to chassis.

15. Locate notch filter assembly and attached mounting bracket and install over top of PC5 as shown on Figure 5.

16. On S10, locate coaxial cable attached to pin 6 (Figure 6). On other end of cable, solder center conductor to pin 5 on notch filter assembly and black shield wire to pin 4.

17. On S10, locate coaxial cable attached to pin 5 (Figure 6). On other end of cable, solder center conductor to pin E on PC1 and black shield wire to pin G at bottom of PC1. Solder to outside of PC1.

18. On S10, locate coaxial cable attached to pin 3 (Figure 6). On other end of cable, solder center conductor to pin 1 on notch filter assembly and black shield wire to pin 2.

19. On notch filter assembly, locate red wire attached to pin 3 and solder other end to pin B2 on PC1.

20. On notch filter assembly, locate black wire attached to pin 2 and solder other end to pin G at top of PC1.

21. Reconnect power cable on chassis to battery pack in cover.

22. Set TTS 58A controls as follows.

    a. HOLD switch to OFF.

    b. NOTCH FILTER switch to OUT.

    c. WTG switch to VOICE.

    d. REF LEVEL DBRN switch to 50.

    e. INPUT switch to 600.

    f. Channel A LO LEVEL switch to 0.

    g. Channel B MID LEVEL switch to 10.

    h. Channel C HI LEVEL switch to 20.

    i. POWER switch to ON.

23. Set TIME-MINUTES control counterclockwise past click to CONTINUOUS.

24. Connect dc voltmeter to BATT TEST + and − jacks. Voltmeter must indicate at least 12 volts if internal

batteries are being used or 18 volts if an external 48 volt source is being used. Replace batteries if necessary.

25. Connect the test equipment as shown in Figure 7. Refer to Table 1 for a list of recommended test equipment.

26. Set external step attenuator for 0 dB of attenuation.

27. Set audio oscillator frequency to 1000 Hz and output level for an indication of 0 dBm into 600 ohms on ac voltmeter.

28. Set external step attenuator for 43 dB of attenuation.

29. The channel A counter should just be counting. If it is not counting slowly, vary the step attenuator ± 0.2 dB. If the channel A counter is not counting slowly within this range, adjust potentiometer R111 (Figure 8) counterclockwise until channel A counter stops counting and then slowly clockwise until the counter just starts to count. Lock potentiometer in this position.

30. Set external step attenuator for 33 dB of attenuation.

31. The channel B counter should just be counting. If it is not counting slowly, vary the step attenuator ± 0.2 dB. If the channel A counter is not counting slowly within this range, adjust potentiometer R211 counterclockwise until channel B counter stops counting and then slowly clockwise until the counter just starts to count. Lock the potentiometer in this position.

32. Set external step attenuator for 23 dB of attenuation.

33. The channel C counter should just be counting. If it is not counting slowly, vary the step attenuator ± 0.2 dB. If the channel C counter is not counting slowly within this range, adjust potentiometer R311 counterclockwise until the channel C counter stops counting and then slowly clockwise until the counter just starts to count. Lock the potentiometer in this position.

34. Set WTG switch to FLAT.

35. The channel C counter should be counting at approximately the rate observed in step 33. If it is not counting slowly, vary the step attenuator ± 0.2 dB. If the channel C counter is not counting slowly within this range, R26 on PC2 must be selected so that the channel C counter just starts to count. See Figure 9 for location of R26.

36. Adjust audio oscillator frequency to 1700 Hz.

37. Set NOTCH FILTER switch to IN.

38. On notch filter circuit board, adjust the gain potentiometer counterclockwise until the channel C counter stops counting and then slowly clockwise until the counter just starts to count.

39. Set POWER switch to OFF.

40. Disconnect all test equipment, place unit in cover, and secure with screws.

Table 1. Test and Calibration Equipment.

Equipment Nomenclature	Required Specifications	Recommended Equipment
VOM	Input Impedance: 20k ohms/volt	Triplett Model 630NA
	Accuracy: 1.5% full scale	
	Range dc volts: 60 volts	
Ac Voltmeter	Input Impedance: 500k ohms	HP 400EL/FL
	Range: −70 to 0 dB	
Audio Oscillator	Frequency: 1000 and 1700 Hz	HP 204C or HP 200CD
	Output Level: 0 dBm	
	Output Impedance: 600 ohms	
Step Attenuator	Range: 0 to 70 dB	Daven Type VT 795G
	Impedance: 600 ohms	
	Accuracy: ± 0.1 dB	
Frequency Counter	Accuracy: 1%	HP 5245L

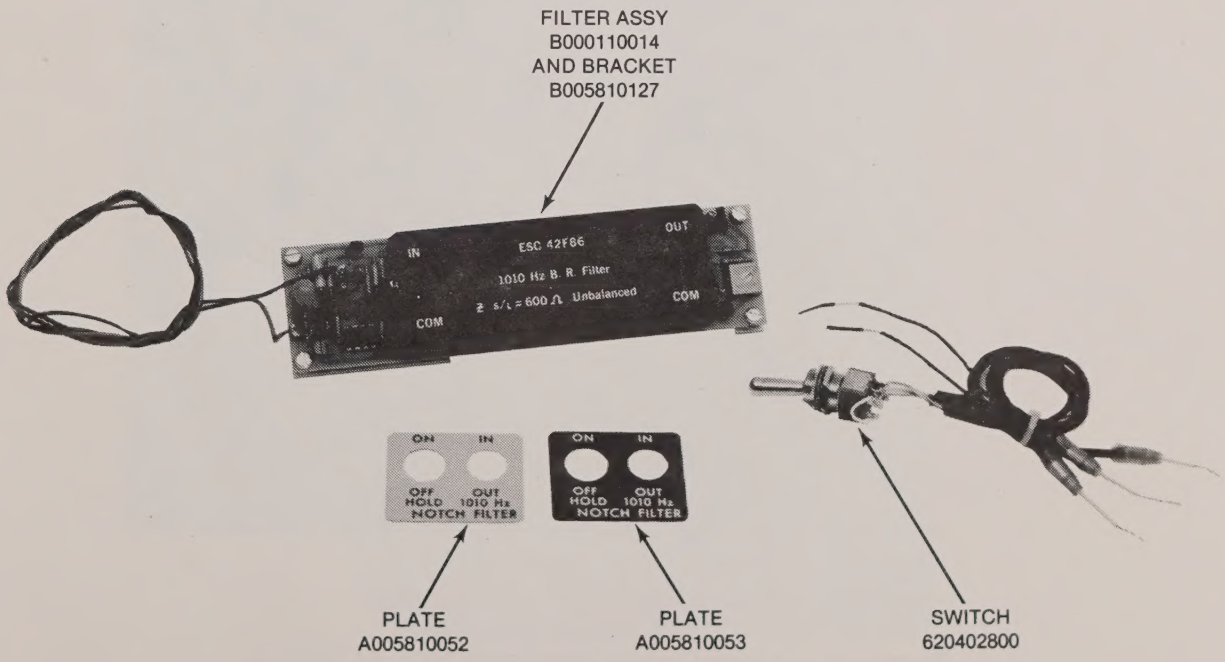

Figure 1. Notch Filter Modification Components.

TTS 58A-CN Modification Parts List.

ITEM	PART NO.
Notch filter assembly	B000110014
Mounting bracket	B005810127
Switch	620402800
Cover plate, light gray	A005810052
Cover plate, dark gray	A005810053
TTS 58A-CN manual	A005810600

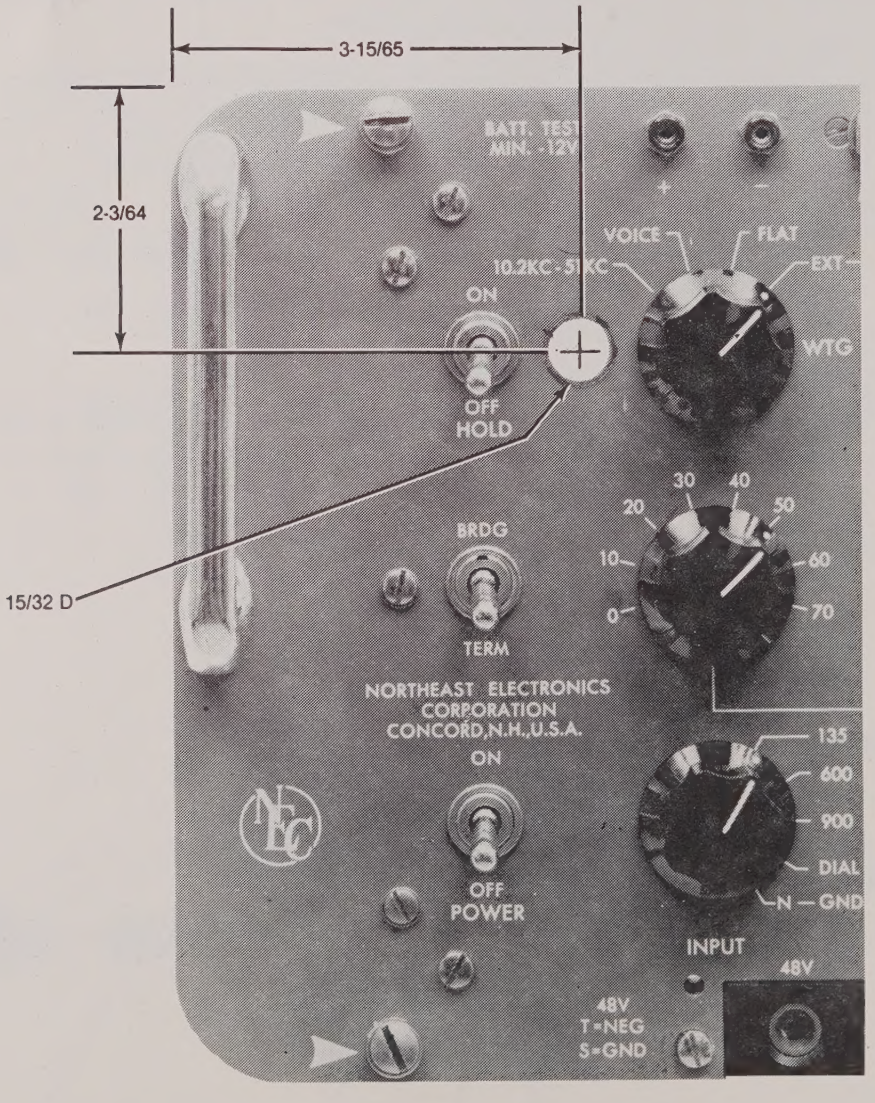

Figure 2. Notch Filter Control Switch Hole Locating Diagram.

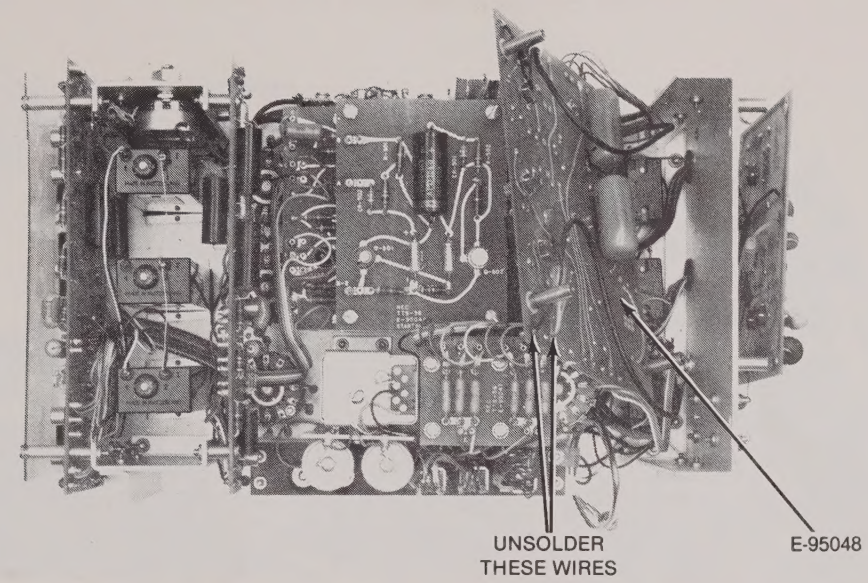

Figure 3. Coaxial Cable to be Unsoldered From PC1 (E-95048).

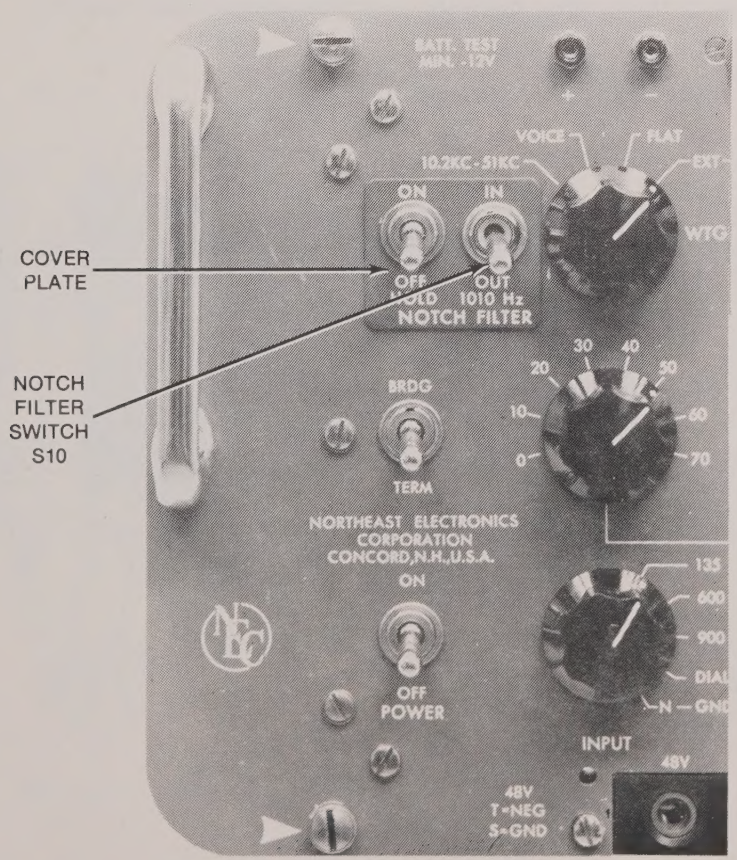

Figure 4. Cover Plate and Switch, Completed Installation.

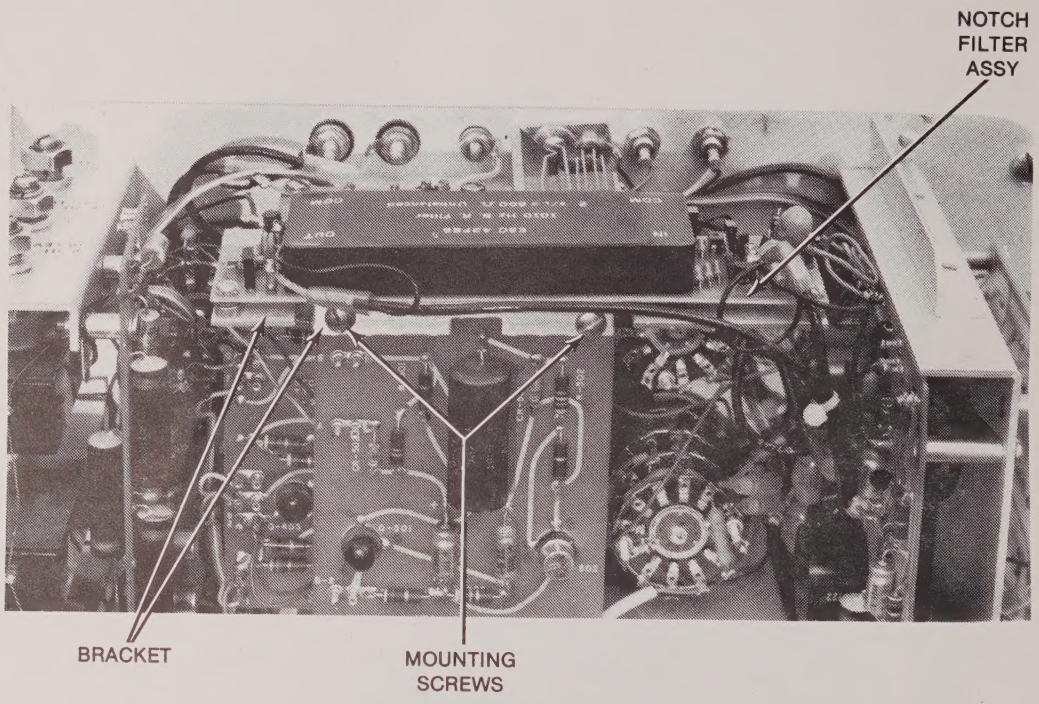

Figure 5. Notch Filter Assembly and Mounting Bracket Location.

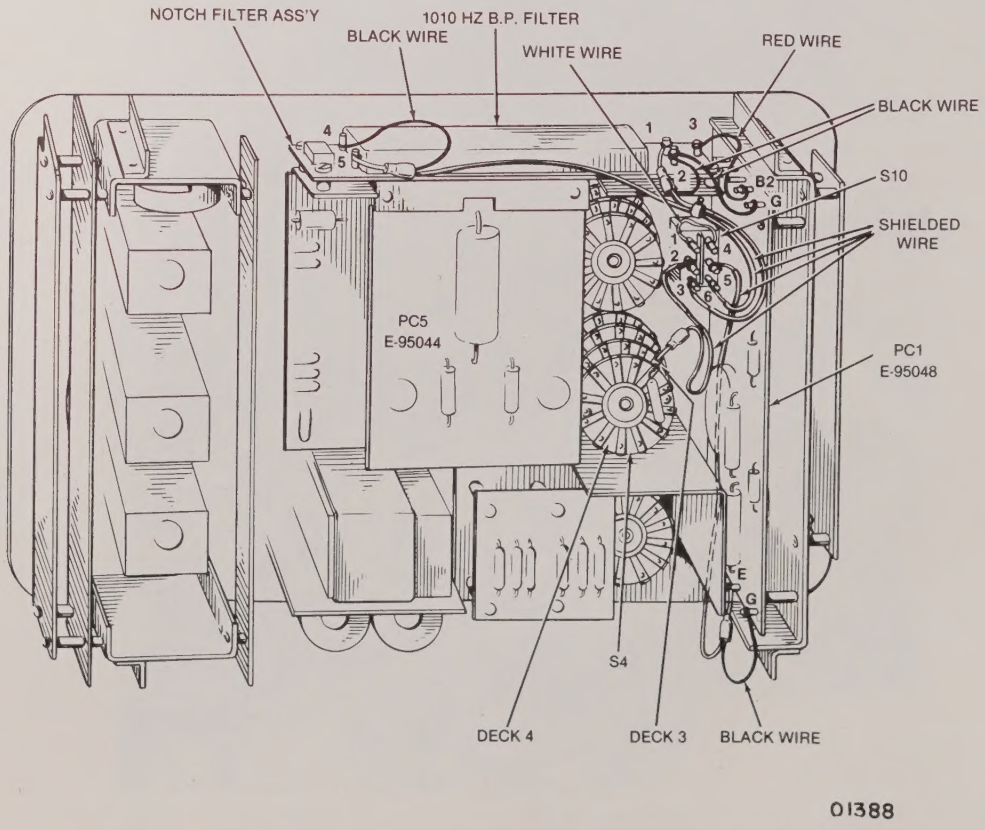

Figure 6. TTS 58A-CN Notch Filter Modification Practical Wiring.

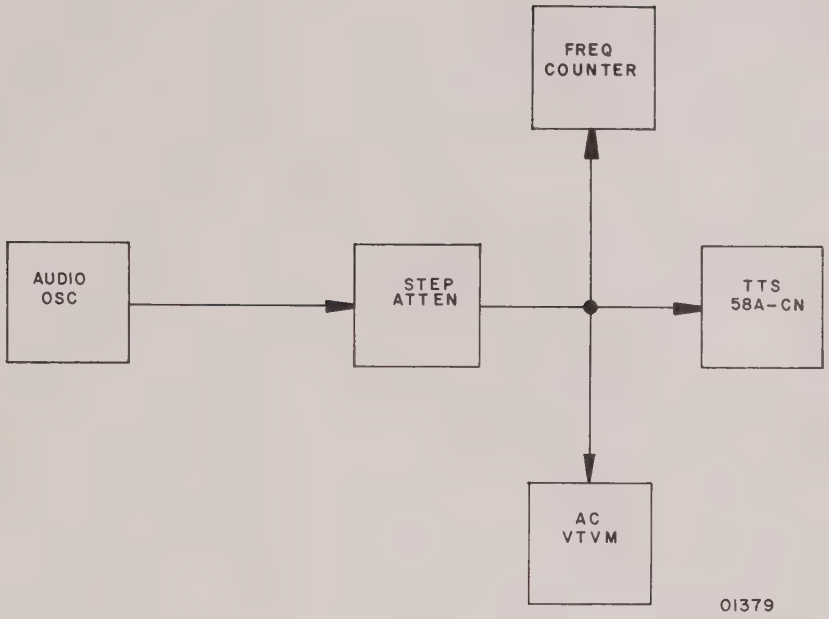

Figure 7. TTS 58A-CN Calibration Test Setup.

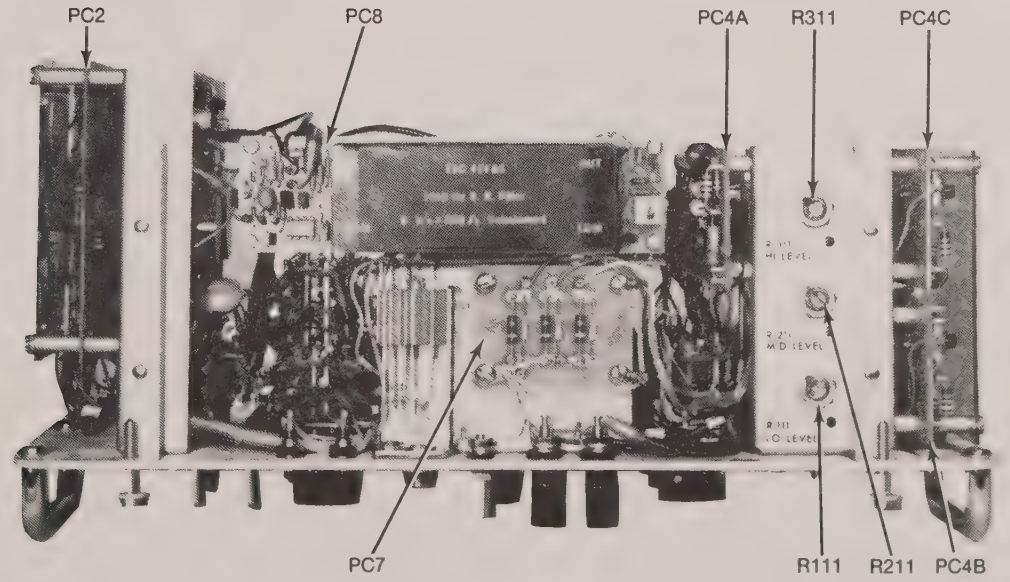

Figure 8. Model TTS 58A-CN Top View, Assembly Location.

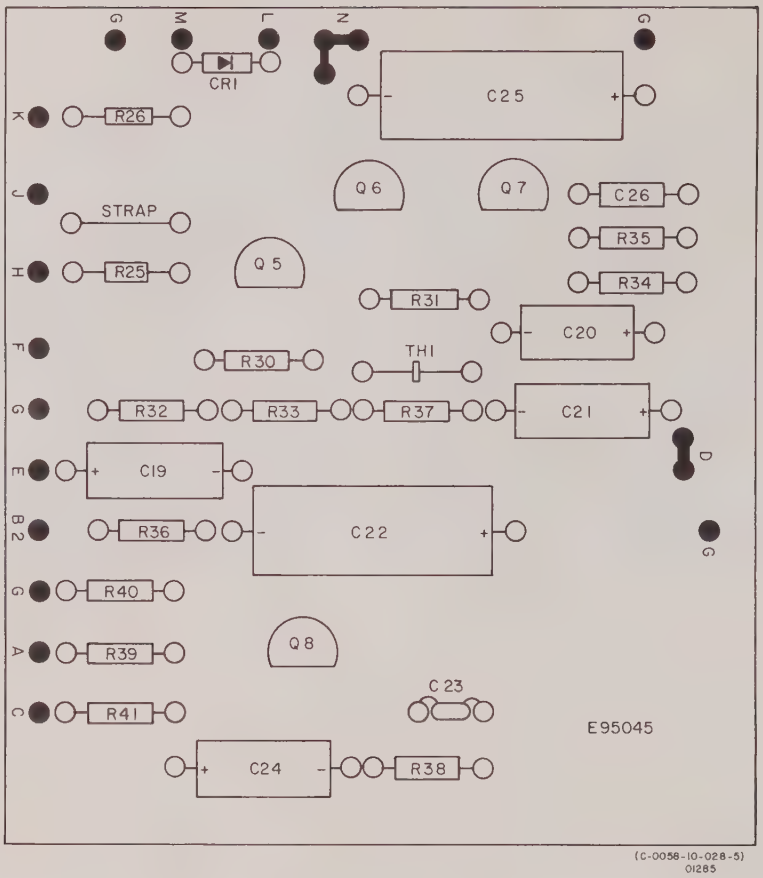

Figure 9. Amplifier 2 And Monitor Amplifier PC2 (E95045) Component Location Diagram.

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